REMARKS

Claims 16-20 and 39-45 are pending in the Application. Applicants have withdrawn Claims 31-38 in view of the restriction requirement in the current Office Action mailed August 30, 2007. Claims 16-20 and 39-45 are rejected under 35 USC §103(a) as being unpatentable over U.S. Patent 6,112,297 to Ray et al. ("Ray") in view of U.S. Patent 5,517,627 to Peterson ("Peterson").

In response to the rejection of the claims as being unpatentable over by Ray in view of Peterson, Applicants have amended each of the pending independent Claims 16 and 39 to more clearly distinguish over the combination of references. Applicants have amended the claims to indicate that the plurality of input bytes are coupled to a predetermined number of byte lanes, and the realigned data comprises a predetermined number of bytes corresponding to the number of byte lanes. Applicants have further amended the claims to indicate that input bytes are realigned using a delay multiplexer and a pass multiplexer. In particular, Applicants have amended the step of determining a data alignment of input data of Claim 16 to indicate that the input data comprises a plurality of input bytes coupled to a predetermined number of byte lanes. Applicants have also added a step of coupling input bytes of the plurality of input bytes to a delay multiplexer and a pass multiplexer. After realigning the input bytes using the delay multiplexer and the pass multiplexer based upon the input alignment signal, the realigned data is output as data comprising a predetermined number of bytes corresponding to the predetermined number of byte lanes. Claims 18 and 19 are amended to conform the claims to the amended Claim 16. Claim 39 has been amended similarly to Claim 16. Support for the amendments to Claims 16 and 39 may be found at least in Figs. 17 and 21, and the text of paragraphs [0042]-[0048] and [0053].

Ray is directed to a system for accessing a single word of a multi-word cache memory, wherein a given single word may be divided between two lines of the cache. The system of Ray couples portions of the desired word to a rotator 212. As shown and described in reference to Figs. 2-6, the logic data unit 204 recognizes that a word required by an instruction is misaligned. Accordingly, the logic generates two

instructions LD1 and LD2 used to perform cache accesses for the portions of the misaligned word to obtain the complete misaligned word. A data unit asserts a bit to the Misaligned/Busy Latch 208, causing the dispatch unit which acquires data to halt any further issues of instructions associated with misaligned data. When data associated with LD1 (indicating that it is the first portion of a misaligned word) is received, the data is rotated in the rotator 212 as required and placed in the merge latch 214 where it is stored awaiting data associated with LD2 indicating the final portions of the load instruction. (Col. 7, lines 2-56). Accordingly, Ray teaches transmitting instructions with different portions of misaligned words in a system used to transmit dual words.

In contrast, Applicants claim a method of realigning data where a plurality of input bytes are coupled to a predetermined number of byte lanes, and the output realigned data comprises a predetermined number of bytes corresponding to the predetermined number of byte lanes. That is, rather than receiving bytes from double word cache lines to generate a single word, Applicants realign input bytes received at a predetermined number of byte lanes, and output realigned data having a number of bytes corresponding to the predetermined number of byte lanes. Applicants further claim coupling input bytes of the plurality of input bytes to both a delay multiplexer and a pass multiplexer, and configure the delay multiplexer and the pass multiplexer according to a shifting configuration based upon an input alignment signal to selectively transfer input data. By using a separate delay multiplexer and pass multiplexer, it is possible to process more than one misaligned word at a time. In contrast, the use of the Misaligned/Busy Latch 208 in Ray halts any further misaligned instructions while processing one misaligned instruction.

Applicants respectfully submit that the claims as amended clearly distinguish over the combination of Ray and Peterson. While Peterson is cited for disclosing the use of an input alignment signal, any combination of Ray and Peterson would not lead to Applicants' claims as amended. Applicants respectfully submit that the dependent claims are believed allowable for the same reasons that the independent claims are believed allowable, and respectfully requests reconsideration of the rejection of the claims.
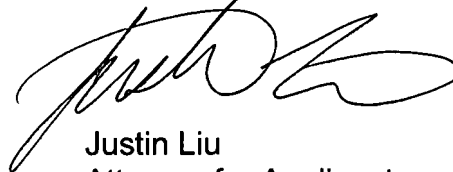
Request for Rejoinder of Claims 31-38

Applicants respectfully traverse the restriction of Claims 31-38 in the current Office Action mailed August 30, 2007 in view of the amendments to Claims 16 and 39 in this response, and request rejoinder of Claims 31-38. Applicants respectfully submit that Claims 31-38 should be in the same group as Claims 16 and 39 as amended. Further, Applicants believe Claims 31-38 are allowable over the cited art, and respectfully request rejoinder and allowance of Claims 31-38.

CONCLUSION

All claims should be now be in condition for allowance and a Notice of Allowance is respectfully requested. If there are any questions, the Applicants' attorney can be reached at Tel: 408-879-4641.
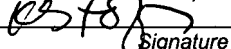
Respectfully submitted,

Justin Liu
Attorney for Applicants
Reg. No. 51,959

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on October 30, 2007.

__Katherine Stofer__ _____
Name   Signature